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# The Relationship Between Concentration, Achievement Motivation, and Academic Stress in Tennis Student Athletes

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## ABSTRACT

This study aims to examine the relationship between concentration, achievement motivation, and academic stress in tennis athletes. The problem raised is how concentration and motivation for achievement can affect the level of academic stress experienced by student-athletes. The research method used is a quantitative approach with a correlation research design. The population of this study is tennis athlete students registered at the university, with a sample of 35 students selected by purposive sampling. The instrument used to measure the variables of concentration, motivation to achieve, and academic stress is a questionnaire that has been tested for validity and reliability. The data collection technique was carried out through the distribution of questionnaires to respondents, while the data analysis technique used Pearson correlation tests and linear regression. The results showed that there was a significant negative relationship between concentration and academic stress (r = -0.48, p = 0.003), US well US between achievement motivation and academic stress (r = -0.52, p = 0.001). The regression model used showed that concentration and motivation for achievement could explain 49% of the variability of academic stress. The study concludes that increased concentration and motivation to excel can reduce the academic stress experienced by college tennis athletes, which can help them balance academic and athletic demands.

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## INTRODUCTION

Entering higher education institutions, students are often faced with various obstacles that can affect their mental health and academic performance. This becomes even more complex for student-athletes in college, especially in the sport of tennis who must balance academic demands and their sporting achievements. College athletes are individuals who have dual roles and responsibilities as athletes and students who are required to carry out both roles in a balanced manner, by participating in sports activities and academic activities (Stambulova et al., 2021). In addition to having to follow a training program to excel in sports, athletes are required to pay attention to academic matters

such as doing assignments, taking courses, exams, and so on. This is a burden in itself, making athletes in college have higher stress levels compared to non-athlete students (Yusof et al., 2020). Barseli et al. (2018) mention that academic stress can arise due to a busy schedule, competition and high motivational pressure. Academic stress is a feeling of anxiety and pressure felt by students both physically and psychologically due to demands in academic matters such as good grades (Mulya & Indrawati, 2016). Academic stress due to pressure to meet high academic demands can affect achievement motivation. Academic stress can reduce learning motivation and overall academic achievement, and increase the risk of dropping out of education (Jabeen et al., 2024; Pascoe et al., 2020). Academic stress can significantly affect achievement motivation, research shows that moderate stress can increase achievement motivation, while high stress tends to decrease this motivation (Roy, 2023; Ramaprabou & Sasi, 2018). Students with high levels of stress tend to have lower motivation to learn and achieve (Novita, 2024). This can create a negative cycle where academic stress can reduce motivation and concentration, which hurts academic performance. Where in the context of tennis athletes, concentration is very important for performance on the court, so academic stress can have a big impact (Syaukani et al., 2020).

Achievement motivation is one of the key factors that influence academic and athletic performance. Achievement motivation plays an important role in overcoming academic stress and improving academic achievement. Where high motivation can moderate the negative impact of test anxiety on academic achievement (Balogun et al., 2017). In other words, achievement motivation can reduce academic stress (Karaman & Watson, 2017). According to Ryan and Deci (2020), achievement motivation can be divided into two types: intrinsic and extrinsic. Athletes who have intrinsic motivation tend to be better able to overcome challenges and stress, not only to get awards but because of their interest in sports. Athletes who have high motivation tend to be more committed to training and competition preparation, which can contribute to their increased performance (Syaukani et al., 2020). Karina & Jannah (2021) shows a negative correlation between achievement motivation and academic stress, that the higher the achievement motivation, the lower the academic stress, and vice versa. As a student-athlete, it is important to balance achievement motivation and stress management as academic stress management, so that students can play an optimal role in both areas (Setiawati et al., 2022).

Concentration is also an important element in achieving academic and career success for student-athletes. Research by McCarthy et al. (2018) shows that good concentration can help athletes deal with academic and sporting pressures more effectively. High concentration can reduce cognitive load and help in better decision-making, which in turn can reduce stress levels. Conversely, low concentration due to stress when facing exams or competitions hurts learning outcomes and athletic performance (Octaviona, 2023). In this context, it is important to understand how academic stress can affect students' concentration, especially in the context of college tennis athletes who must deal with pressure from multiple angles (Sembiring et al., 2023).

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Sadeghi et al. (2019) study stated that students with high achievement motivation have lower stress levels. In addition, research by Kaur and Kaur (2021) found that good concentration is negatively related to stress levels, indicating that athletes who can maintain focus will be better able to manage stress arising from academic demands. To address this issue, educational institutions need to create a supportive environment that can reduce academic stress and improve student well-being (Novita, 2024). Including providing resources for stress management, such as psychological counselling and time management skills development programs. In this way, students can better manage the stress they experience, so they can maintain the motivation and concentration needed to succeed in both academic and sports areas (Octaviona, 2023).

Overall, the relationships among concentration, achievement motivation, and academic stress in collegiate tennis athletes are complex and interrelated. Understanding these dynamics is critical to supporting students in reaching their full potential as tennis student-athletes, both in the classroom and on the court. This study aims to explore the relationships between concentration, achievement motivation, and academic stress in collegiate tennis athletes. By understanding these relationships and highlighting the importance of fostering effective motivation and coping strategies in the educational environment, it is hoped that effective strategies can be found to assist in designing appropriate interventions for student-athletes in managing their academic stress, increasing achievement motivation, and maintaining optimal concentration during training and competition.

## METHODS

The type of research used in this study is non-experimental quantitative research. Quantitative research is chosen because it allows for objective measurement of perception, using numbers and statistical data to explain the relationship between concentration, achievement motivation and academic stress (Sugiyono, 2019). Non-experimental quantitative methods are methods with research data collected and analyzed where the data is in the form of numbers, data analysis uses certain statistical calculations whose results will be used to answer the research hypothesis (Jannah, 2018).

The population in this study were tennis athletes who were active in Indonesian universities. Sampling was done purposively, namely by selecting tennis athletes who were active in universities in Indonesia and had participated in matches representing universities, as criteria in the study. Based on (Ary, 2018) purposive sampling technique is used to focus on individuals who have direct experience and perspectives relevant to the research. The sample taken in this study was 35 respondents who met the research criteria.

This study used three psychological instruments to measure achievement motivation, concentration, and academic stress. The research instrument used was a

structured questionnaire, the Achievement Motivation Inventory (Schuler et al., 2004) to measure achievement motivation and Perception of Academic Stress (Morse & Dravo, 2007) to measure students' academic stress. Meanwhile, to measure concentration, researchers used the Concentration Grid Test by Harris, D.V., & Harris, B.L. (1984)(in Greenlees et al., 2006).

Data collection was conducted through the distribution of questionnaires online and directly to the respondents involved. Online questionnaires allow for extensive data collection in a short time, while direct questionnaires ensure that data is collected representatively from respondents who have limited online access (Fraenkel, 2015). The data analysis technique in this study uses the help of SPSS Version 29. With several analyses including the Pearson correlation test and multiple regression analysis.

## RESULTS AND DISCUSSION

### Result

This section presents the results of the study which include a descriptive analysis of subject characteristics, prerequisite tests, and hypothesis testing to understand the relationship between concentration, achievement motivation, and academic stress in tennis student-athletes. Data obtained from 35 respondents were analyzed quantitatively to provide an overview of the characteristics of the research subjects and the relationship between the variables studied. The results of the descriptive analysis will be presented first to describe the distribution of age, gender, and achievement level of respondents, followed by prerequisite tests to ensure the eligibility of the data for further analysis. Furthermore, hypothesis testing is carried out to identify significant relationships between research variables.

**Table 1.**
Characteristics of research subjects

| Characteristics | Category | Frequency (n) | Percentage |
|---|---|---|---|
| Age | 17 - 18 | 10 | 28.6 % |
| | 19 - 20 | 15 | 42.9 % |
| | 21 - 22 | 7 | 20.0 % |
| | >23 | 3 | 8.5 % |
| Gender | Man | 20 | 57.1 % |
| | Woman | 15 | 42.9 % |
| Performance | National Level | 12 | 34.3 % |
| | Provincial Level | 18 | 51.4 % |
| | City/district level | 5 | 14.3 % |

Based on the table above, the majority of research participants were aged 19-20 years (42.9%), which is the transition age from adolescence to young adulthood. The research subjects were dominated by men (57.1%), but the proportion of women was quite significant (42.9%). Most student-athletes have achieved achievements at the provincial level (51.4%), while 34.3% have reached the national level, and the rest are at the city/district level (14.3%).

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**Table 2.**
Descriptive research data and normality test

| Variables | N | Average + SD | Sig | Information |
|---|---|---|---|---|
| Concentration | | 75.3 + 6.50 | .087* | |
| Motivation to Achieve | 35 | 82.1 + 5.80 | .112* | Normal |
| Academic Stress | | 60.4 + 7.20 | .095* | |

Based on the results of the normality test using the Kolmogorov-Smirnov test, it can be seen that the variables studied have a significance value (Sig.) greater than 0.05, namely 0.087 for Concentration, 0.112 for Achievement Motivation, and 0.095 for Academic Stress. Because the significance value for the three variables is greater than 0.05, it can be concluded that the data for the three variables are normally distributed.

**Table 3.**
Linearity Test Results

| Variable Relationship | F | Sig | Information |
|---|---|---|---|
| Concentration → Academic Stress | 5.64 | .021 | Linear |
| Achievement Motivation → Academic Stress | 7.23 | .010 | |

The results of the linearity test show that there is a significant linear relationship between the Concentration and Academic Stress variables, with an F value of 5.64 and a significance value (Sig.) of 0.021, which is smaller than 0.05. This indicates that changes in the Concentration variable can affect changes in Academic Stress, and this relationship is linear. Likewise, the linearity test between Achievement Motivation and Academic Stress produces an F value of 7.23 with a Sig. A value of 0.010, which is also smaller than 0.05, indicates that there is a significant linear relationship between the two variables.

**Table 4.**
Pearson correlation test results

| Variable Relationship | r | Sig | Information |
|---|---|---|---|
| Concentration → Academic Stress | -0.48 | .003 | Significantly negative correlation |
| Achievement Motivation → Academic Stress | -0.52 | .001 | |

The results of the Pearson correlation analysis showed that there was a significant negative relationship between Concentration and Academic Stress ($r = -0.48$, $p = 0.003$) and between Achievement Motivation and Academic Stress ($r = -0.52$, $p = 0.001$). The negative correlation values for both variables indicate that the higher the level of concentration and achievement motivation of student-athletes, the lower the level of academic stress they experience. Statistically, both of these relationships are significant at the $p < 0.05$ level, which means that the results found did not occur by chance. In other words, good concentration and high achievement motivation play a role in reducing academic stress, which is important to support the academic and athletic well-being of students.

**Table 5.**
Multiple regression test results

| Variables | B | t | Sig | Information |
|---|---|---|---|---|
| Concentration | -0.35 | -2.89 | .007 | Significant |
| Motivation to achieve | -0.41 | -3.21 | .003 | |

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The results of the regression analysis showed that the variables Concentration (B = -0.35, t = -2.89, p = 0.007) and Achievement Motivation (B = -0.41, t = -3.21, p = 0.003) had a significant negative effect on Academic Stress. The negative B values for both variables indicate that an increase in Concentration and Achievement Motivation will reduce the level of Academic Stress experienced by student-athletes. With a p-value of less than 0.05, these two variables can be considered significant, meaning that the relationship found is not coincidental. Overall, these results indicate that interventions that increase concentration and achievement motivation can be an effective strategy for reducing academic stress among student-athletes.

**Table 6.**
Multiple regression equation

| Variables | R2 | F | Sig | Information |
|---|---|---|---|---|
| Concentration<br>Motivation to achieve | 0.49 | 12.54 | .000 | Significant |

The results of the regression model show that $R^2 = 0.49$, which means that 49% of the variability of academic stress can be explained by the two independent variables, namely Concentration and Achievement Motivation. This figure shows that the regression model used is quite good at explaining the factors that influence academic stress among student-athletes. In addition, the results of F = 12.54 with a Sig. Value = 0.000 indicates that the overall regression model is significant. This means that at least one of the independent variables (Concentration or Achievement Motivation) has a significant relationship with the dependent variable (Academic Stress). In other words, this model is acceptable and can be used to predict academic stress in student-athletes.

## Discussion

This study aims to investigate the relationship between concentration, achievement motivation, and academic stress in tennis student-athletes. The results of the study showed a significant negative relationship between concentration, achievement motivation, and academic stress, with a fairly strong influence of both variables on the level of academic stress in student-athletes.

The results found in this study indicate that concentration has a significant negative effect on academic stress (r = -0.48, p = 0.003). This means that the higher the concentration of student-athletes, the lower the level of academic stress they experience. This finding is in line with research by Smith et al. (2020) who also found that high concentration can help individuals manage academic pressure better, thereby reducing the level of stress they face. On the other hand, Gould (2017) in his study showed that student-athletes who can focus well on their studies are better able to balance academic and sports demands without feeling excessive stress.

Likewise, achievement motivation was also found to have a significant negative relationship with academic stress (r = -0.52, p = 0.001). This indicates that student-athletes with high achievement motivation tend to have lower levels of academic stress. This finding is in line with the results of the study by Deci & Ryan (2018) which emphasizes

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that achievement motivation can serve as a protective factor against academic stress, as motivated individuals tend to have better focus and are better prepared to face academic challenges. Research by Machi et al. (2021) also supports these results, where they found that intrinsic motivation contributes to better stress management in athletes.

Unlike previous studies, this study specifically examines the relationships between concentration, achievement motivation, and academic stress in tennis student-athletes, a context that has not been widely studied. Most previous studies have focused on the relationship of academic stress to general psychological factors such as anxiety and social support, while this study makes a novel contribution by linking two specific factors—concentration and achievement motivation—to academic stress in the context of student-athletes.

The results of the regression analysis showing that 49% of the variability in academic stress can be explained by these two variables also provide a deeper understanding of the factors that influence the academic well-being of student-athletes. This regression model is an important step in developing intervention strategies that can help student-athletes to better manage stress, especially in balancing academic and sporting demands.

This study shows that concentration and achievement motivation play an important role in reducing academic stress in student-athletes. Therefore, campuses and coaches need to design programs that support the development of concentration and achievement motivation in student-athletes, so that they can more easily manage stress that arises from academic and sports demands. Training programs that focus on improving mental and motivation can be an effective strategy to reduce the negative impact of academic stress.

## CONCLUSION

This study concluded that concentration and achievement motivation have a significant negative effect on academic stress in tennis student-athletes. Increasing concentration and achievement motivation can reduce academic stress levels, help student-athletes manage the pressures of academic and sporting demands, and improve their well-being.

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